IDAHO ALTERNATIVE ASSESSMENT EXTENDED SCIENCE CONTENT STANDARDS

Extended Knowledge and Skills

Preamble:

The members of the Idaho Alternate Assessment Extended Standards workgroup reviewed the Idaho Achievement Standards from Science and Health for all students as a starting point for the extended knowledge and skills with sample applications in these content areas. This approach ensures a common base for local development of strong science and health curriculums that will meet the daily and independent living, motor, and/or recreation/leisure needs of students with disabilities.

Science is a human endeavor that seeks to understand the world by observation, trial, and error (experimentation), and responses to observations (rational interpretation). At its core, science is a method of asking questions that may be extended to problem solving in many areas of life. An observation leads to a question or problem. The question or problem suggests trial and error activities that might be done to further understand or arrive at a solution. The questions that are capable of being explained by observations allow the students to respond to predictable situation and retain these while discarding the ones that fail. Only those that have been proven over considerable periods will be successful and meaningful to the students.

All students with a disability must have the opportunity to be involved in and progress in the general education science curriculum. The Idaho Achievement Standards form the framework on which the general education curriculum is based and the grade level content knowledge and skills are used to guide instruction. However, when a student with a significant (cognitive) disability is unable to progress in the general education content knowledge and skills, that student can still progress in the general education curriculum by demonstrating alternate content knowledge and skills for the achievement standards. This approach ensures a common base for local development of strong science and health curriculums that will meet the daily and independent living, motor, and/or recreation/leisure needs of students with significant (cognitive) disabilities. In order to monitor the performance of students with significant (cognitive) disabilities towards these alternate knowledge and skills, the statewide alternate assessment for science is aligned with this document.

Note: The samples associated with the content standards are meant to illustrate meaning and to represent possible areas of application. They are not intended to be an exhaustive list, but are samples of applications that would demonstrate learning.

UNIFYING CONCEPTS OF SCIENCE

Content Standard - The student will:	Extended Knowledge & Skills:	Samples of Applications:
01. Understand concepts and processes of evidence, models, and explanation	S-1. Understand that a system is an organized group of related objects that form a whole	a. Categorize and/or sort mammals vs. birds, plants vs. animals b. Solar system (sun, earth, moon)

	S-2. Demonstrate skills in observation and prediction	a. Use a daily object/texture calendar system to predict activities b. Use a written class schedule c. Weather to predict clothing (Sees snow-gets coat) d. Predict who will be the tallest at the end of the year e. Plant seed and observe, record changes f. Anticipate a change when cued g. Sample applications h. Computer software that focus on observation to elicit a response i. Observing a job task and deciding there is a need for more help j. Drop heavy, light object, predict which one hits first
	S-3. Use models to explain how things work.	a. Sun, earth, moon for night and day b. Paper airplanes
02. Understand constancy, change, and measurement.	S-4. Understand that change occurs.	a. Use a symbolic/non-symbolic system for daily transitions b. Plant seeds and monitor growth c. Trim fingernails and observe growth d. Amaryllis bulbs e. Anticipates a change in an event or object when presented with a visual, auditory or tactile cue (hears bell-gets backpack) f. Make a scrapbook g. Calendar events h. Create memory book/log i. Track job task completion j. Plants unit k. Change in job over time
	S-5. Measure in both standard and metric system	a. Use a measuring cup b. Participate in creating a class growth chart
03. Participate in learning the theory that evolution is a process that relates to the gradual changes in the universe and of equilibrium as a physical state.	S-6. Know that the present is related to the past	a. Make a scrapbook b. Use a calendar system (word, object, picture, texture)
04. Participate in learning about the concepts of form and function.	S-7. Explore form and function	a. Group pictures of animals in their habitat b. Build something out of legos

CONCEPTS OF SCIENTIFIC INQUIRY

Content Standard - The student will:	Extended Knowledge & Skills:	Samples of Applications:
01. Participate in scientific inquiry and developing critical thinking skills.	SI-1. Participate in steps of the scientific method to solve problems: a. ask questions b. make observations c. gather information using tools d. summarize & display information/data e. make predictions or decisions f. discuss alternative answers (The more steps a student can do, the more proficient their performance would be.)	a. Will the fish live on the carpet? b. On a hot summer day, what melts faster, and ice cream cone or a large ice cube? c. What happens to water when it freezes? d. Pushes spoon away – sees if food is taken away e. Make predictions realizing what's going on around them, ie, cooking smells, kitchen noises, time to eat f. Use a chart to keep track of daily weather using picture symbols g. Participate in a science group that assembles rock and mineral collections based on characteristics of texture and color h. Measuring cups i. Scales j. Thermometer k. Wind sock l. Use five senses to make predictions about upcoming activities m. Use a calendar system to predict activities n. Predict clothing according to weather o. Predict the effect water has on plants (cacti, succulent) p. If you don't have hand soap, what can you use? q. If you don't have a ruler, what can you use?

CONCEPTS OF PHYSICAL SCIENCE

Content Standard - The student will:	Extended Knowledge & Skills:	Samples of Applications:
01. Participate in learning about the structure and function of matter and molecules and their interactions	PS-1. Explore and learn that matter is in various forms and states	a. Compare: solids, gases, liquids (ie, water and cornstarch) b. Freeze orange juice and observe the change from liquid to solid c. Boil water d. Melt snow

	PS-2. Identify properties of common materials	a. Observe and compare the following: Ice is a solid Water is a liquid Steam is a gas Food can be a liquid or solid b. Sort pictures of common materials by solid, liquid, gas
02. Participate in learning the concepts of motion and forces	PS-3. Explore and learn concepts of motion and forces	a. Bowling – observe speed of a ball, on a ramp or dropped, etc. b. Dominoes – effect of one striking another in a series c. Mixing items for cooking d. Pick up nails with magnets e. Friction: ie, rubbing balloon on head or scuffing feet on carpet f. Explore simple machines: lever – seesaw, scissors, hammer, bottle opener, etc. inclined plane – ramp, escalator, stairs, ladder wedge – door stop, knife, nails, pins, needle screw – fan wheel & axle – doorknob, water faucet, bike handlebars, can opener, etc. pulley – raise flag, open curtains/drapes
03. Understand that the total energy in the universe is constant.	PS-4. Explore different forms of energy	a. Use magnets b. Cook with solar energy c. Friction (rubbing) d. Static electricity (balloon) e. Hydroelectricity – visit a dam
04. Understand chemical reactions	PS-5. Matter can undergo chemical and physical change	a. Don't mix bleach with ammonia b. Water in plaster of paris c. Water and cornstarch

CELLULAR AND MOLECULAR CONCEPTS

Content Standard - The student will:	Extended Knowledge & Skills:	Samples of Applications:
01. Understand the cell is the basis of form and function for all living things and how living things carry out their life functions.	CM-1. Learn that all life forms have cells	a. Observe objects under a microscope, such as onion skin and cheek scrapings b. Sort life forms/not life forms c. Identify traits that you share with family members, ie, hair color, eyes, shape, size, sex, etc. d. Choose foods/non foods e. Make food choices f. Make a model of a cell g. Observe that a cut heals, a non-living thing doesn't h. Fingernails and hair grow

INTERDEPENDENCE OF ORGANISMS AND BIOLOGICAL CHANGE

Content Standard - The student will:	Extended Knowledge & Skills:	Samples of Applications:
01. Understand the theory of biological evolution	BC-1. Explore, observe, and learn about life cycles of plant/animals and their basic needs	a. Animal habits b. Basic needs: caring for a classroom pet/plant c. Visit a farm d. Raise a garden/plants
	BC-2. Recognize the differences between plants and animals	a. Sort and categorize plants/animals b. Sort by attribute: who has brown hair, boy vs girl, eye color, height, age c. Recognize specific needs of plants/animals in classroom job d. Understand body parts – plant parts

MATTER, ENERGY, AND ORGANIZATION IN LIVING SYSTEMS

Content Standards - The student will:	Extended Knowledge & Skills:	Samples of Applications:
01. Understand the relationship between matter, energy, and organization to trace matter as it cycles and energy as it flows through living systems and the environment.	ME-1. Recognize the difference between living and non-living things and what they need to survive, ie, food, water, sunlight	a. Discover the needs of living things, such as food, water, air, and shelter b. Sort by living, non-living c. Demonstrate ability to care for living things, such as watering a plant, caring for classroom pet d. Differentiate between wants and needs. e. Create a poster of the food chain
02. Understand the individual behavior of organisms and their interactions in populations and communities are influenced by physiological and environmental factors.	ME-2 Demonstrates object permanence and responds to stimuli in the environment	a. Student searches for a person. b. Plays hide and seek c. Put items away and relocate at later time. d. Know that organisms have behavioral responses to internal and external stimuli, ie, indicate hunger pain, respond to bell schedule, different sounds and what they represent

EARTH AND SPACE SYSTEMS

Content Standard - The student will:	Extended Knowledge & Skills:	Samples of Applications:
01. Understand scientific theories of origin and subsequent changes in the universe and earth systems.	ES-1. Explore, observe, and identify the four seasons, the length of day, year, etc that are factors of change in the universe and earth systems.	a. Dress a paper bear in appropriate clothing for the season b. Learn the terms *summer* and *winter* and the type of weather associated with them c. Nature walk d. Phases of tree: Winter – bare Spring – blossoms Summer – leaves Fall – colors e. Create four seasons posters: tear or cut paper for collage, cut pictures from magazines for each season f. Picture schedules g. Calendar of time: days of week holidays appointments hours or days worked h. Day and night i. Apply sunscreen j. Wear a hat outside in the sun k. Observe safety precautions to move outside in snowy or icy weather l. Locate shade
02. Understand geo-chemical cycles and energy in the earth system.	ES-2. Explore evaporation and precipitation.	a. Hang a wet towel out to dry b. Go outside in the rain and look where the rain comes from c. Boil water or let evaporate in the sun and chart d. Keep a cloud journal e. Make a cloud in a jar f. Whip cream/pudding clouds
	ES-3. Observe and/or respond to different weather conditions.	a. Dress for the different weather conditions b. Newspaper, TV, source of weather information c. Vocabulary development (examples Flurry, isolated, precipitation, blustery, breezy, windy, tornado, hurricane, drought, flash flood, sleet, hail, etc.) d. Keep a weather chart e. Make a wind sock

TECHNOLOGY

Content Standard - The student will:	Extended Knowledge & Skills:	Samples of Applications:
01 Understand the relationship between science and technology and develop the abilities of technological design and application.	T-1. Explore and create with scientific tools	e. Participate in an exploration center with various scientific tools (magnifying glass, magnets, rulers, etc) f. Use a computer to draw a picture g. Move something heavy with a lever h. Play on a teeter totter and move a friend up and down i. Open or split something with a wedge j. Use an extendable claw k. Looks at the computer when cued. l. Student create a tool to use in a game
	T-2. Use available and appropriate technology.	a. Use a computer learning aid b. Use workman tools to solve a problem, ie. Lever, wedge, scissors, etc c. Use computer and switches, output devices, etc. d. Determine whether to use spoon or fork e. Use pencil grips when appropriate

PERSONAL AND SOCIAL PERSPECTIVES

Content Standard - The student will:	Extended Knowledge & Skills:	Samples of Applications:
01. Understand common environmental quality issues, both natural and human induced	PSP-1. Observe, participate, and discuss characteristics of the local environments (classroom, playground, school, neighborhood, etc.)	a. Take a walk around the school and observe the physical characteristics of surrounding environment b. Burning fields, pollen, air quality c. Pick up trash/litter in various environments d. Dispose of trash – clean area in lunchroom

	PSP-2. Explore the concept of recycling	a. Collect aluminum cans b. Visit a recycling plant c. Recycle paper for shredding: ceramic stores pet stores d. Sort recycleables: paper cans glass plastic laminating rolls ends cover books eye gaze boards
02. Understand the causes and effects of population change.	PSP-3. Understand the causes/effects of population changes in families, classrooms, etc.	a. Birth/death/divorce in family b. Moving c. Compare class pictures from year to year d. Sibling leaves family college marriage incarceration e. Employment: hiring – leaving - retiring
03. Understand the importance of natural resources and the need to mange and conserve them.	PSP-4. Demonstrate and understand the importance of conservation	a. Turn off lights when leaving a room b. Turn off water when not being used brush teeth shaving c. Turn off electric wheelchair when not being used d. Put on a sweater when cold instead of turning up heat e. Use microwave to heat leftovers f. Turn down thermostat g. Sort recyclable materials

HISTORY OF SCIENCE

Content Standard - The student will:	Extended Knowledge & Skills:	Samples of Applications:
01. Understand the significance of major scientific milestones.		

INTERDISCIPLINARY CONCEPTS

Content Standard - The student will:	Extended Knowledge & Skills:	Samples of Applications:
A. Understand that interpersonal relationships are important in scientific endeavors	IC-1. Learn appropriate cooperation and interaction skills	a. Provide opportunities and settings for the students to work together b. Everyone hold hands to complete the circuit (electrostatic ball) c. Attends to stimuli to engage in

		an interaction (turns heads when name called) d. Cooperatively working together as a team e. Understanding the importance of working as a team, ie, two heads better than one, get materials for gr. f. Appropriately greeting others g. Activate a communication device to interact, ie, augmentive communication device
B. Understand technical communication	IC-2. Understand and follow directions.	a. Follow one step direction, ie, write name b. Follow two step, three step, four step direction, etc. c. Follow written directions, ie, written, oral, object direction d. Put together a model following a plan